IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Nicola Anne Burgess EXAMINER: Gussow, Anne M.

SERIAL NO : 10/575,311 ART UNIT: 1643

FILED : October 22, 2004

FOR : PROTEIN INVOLVED IN OVARIAN CANCER

DECLARATION UNDER 37 C.F.R. 1.132

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 July 3, 2007.

Loretta Kavanagh
Name of Person Depositing Mail)

Loretta Kavanagh 7/3/2007
(Signature and Date)

I, SEAN MASON as evidenced by my signature below, declare the following:

1. I am a Molecular Biologist, having received my Ph.D. degree in 1993, after which I was a postdoctoral fellow with the ICRF (now CRUK) at the Molecular Oncology Unit, Hammersmith Hospital, London. Following this, I was a Senior Scientist at Acambis in Cambridge, UK before joining Oxford Glycosciences becoming Group Leader in the Therapeutic Antibody Dept. I am currently employed as a Senior Group Leader in the Oncology Biology Dept of UCB, Slough, Berks, UK.

2. My curriculum vitae is attached hereto as Exhibit A.

3. My principal area of research is the characterization, validation and pre-clinical evaluation of therapeutic antibodies for human cancer.

4. I am not the inventor of subject matter claimed in the above-referenced patent application.

5. **Immunohistochemical Analysis of CDCP1 expression in cancer tissue.** The immunohistochemical (IHC) data presented with this declaration concern the expression of CDCP1 in clinical ovarian cancer tissues. Expression of CDCP1 was detected in ~ 60% of the samples with no expression evident in five normal ovarian tissues. An isotype control antibody did not produce appreciable staining in either the normal ovarian or ovarian cancer tissues. The IHC data suggest that an anti-CDCP1 antibody could target ovarian tumours that express CDCP1 and provide a therapy, either through recruitment of immune effector mechanisms, modulation of CDCP1 function or via a toxin conjugated antibody. Any combination of these mechanisms is also possible.

6. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application, or any patent issuing thereon.

Submitted by: Sean Mason

S Mason

Date Signed: 18th May ,2007

See below for Exhibit A

EXHIBIT A

EXHIBIT A

CURRICULUM VITAE
Sean Mason

PROFILE

I am a molecular/cell biologist with 11 years experience in the biotechnology industry in the fields of oncology and allergy. The allergy research focused upon IgE and the development of a potential active vaccine to combat this disease. My current responsibilities are focused on the identification, validation and pre-clinical progression of candidate therapeutic antibodies specific for tumour-associated antigens. Validation of putative tumour antigens as viable targets also forms part of the research effort of my group. I am currently leading a collaboration with an antibody based company.

EMPLOYMENT

July 2001 – present UCB, 216 Bath Road, Slough, BERKS. SL1 4EN

Position: Senior Group Leader Oncology Biology

Responsibilities: Research group of 6: 2 Senior Scientists (PhD), 4 Scientists (Graduate)

- Joined OGS in 2001 (OGS acquired by Celltech in 2003; UCB acquired Celltech in 2004).
- Responsible for directing, organising and prioritising the research activities of the Group. This includes: identification, selection and characterisation of candidate therapeutic antibodies to a number of tumour antigens. Progression of Abs to pre-clinical proof of efficacy studies.
- Responsible for development of Group members.
- Project Leader for 2 projects – includes co-ordinating research activities across several departments.
- Lead the collaboration with BioInvent. Played a lead role in establishing the working relationship with BI. Previously (during OGS employment) involved extensively in Medarex collaboration. Represent research at quarterly Joint Steering Committee meetings.
- Identified and progressed lead candidate in first therapeutic antibody project at OGS to IND submission stage: *in vitro* assays, *in vivo* xenograft models, selection of toxicity study species, development of lot release and PK assays for lead mAb.
- Group research activities include antibody selection screens, functional cell based assays, IHC, *in vitro* assays, *in vivo* model development.

June 1996 – July 2001 Acambis plc, Peterhouse Technology Park, 100 Fulbourn Rd, Cambridge. CB1 9PT.

Position: Senior Scientist

- Main project involved development of an active vaccine to combat allergy. Initial responsibilities included reagent production (recombinant proteins) and assay development (*in vitro* and cell line based) to enable characterisation of key mAbs and polyclonal sera.
- Epitope identification and subsequent mimotope development for several mAbs. The epitopes/mimotopes were expressed in a biological display system for candidate vaccine identification and development.
- Introduced a structural biology focus to the project that led to the identification of the lead vaccine candidate.
- In addition to practical work, I was involved in directing project strategy and liaising with our collaborators with whom I worked closely in the production of two patents. Patents currently continued.
- Co-ordinated final research phase of project.
- Supervisory duties across several projects
- Final project aimed to express heterologous antigens in *Salmonella.*

Jan 1993 – June 1996 Imperial Cancer Research Fund Molecular Oncology Laboratory, Hammersmith Hospital, London. W12 ONN. Head of laboratory: Prof W J Gullick

Position: Postdoctoral Research Fellow

- Cloning, expression and characterisation of a single-chain antibody fragment (scFv) to the epidermal growth factor receptor for the purpose of tumour imaging. Large scale production of this scFv was being developed at the Hybridoma/Service department of the ICRF in preparation for a small scale trial to image bladder tumours. Tumour targeting studies *in vivo* (mouse model) formed part of the research.
- Generation of scFv-fusion proteins for potential therapeutic purposes.
- Inhibition of dimerisation of the *neu* oncogene product by the expression of targeted peptides.

EDUCATION

Oct 1987 – Mar 1992	University of Warwick, Coventry, West Midlands PhD "Mapping the Cell Binding Domain of the σ1 Protein of Reovirus" Supervisor: Prof M A McCrae
1984 – 1987	University of Sussex, Falmer, Brighton BSc (Hons) Biochemistry (2.1)

APPENDIX

Publications

McKenzie E, Young K, Hircock M, Bennett J, Bhaman M, Felix R, Turner P, Stamps A, McMillan D, Saville G, Ng S, **Mason S**, Snell D, Schofield D, Gong H, Townsend R, Gallagher J, Page M, Parekh R, Stubberfield C. (2003) Biochemical characterisation of the active heterodimer form of Human Heparanase (Hpa1) protein expressed in insect cells. Biochem J. **373 (2)**, 423-35.

Fletcher G, **Mason S**, Terrett J, Soloviev M. (2003) Self-assembly of proteins and their nucleic acids. J Nanobiotechnology. Jan 28;**1**(1):1.

Lohmeyer, M; **Mason, S** and Gullick WJ. (1997) Characterization of chimeric proteins constructed from human epidermal growth factor (EGF) and the *Drosophila* EGF-receptor antagonist *argos*. Int J Oncology 10, 677-682.

Jannot, CB; Beerli, RR; **Mason, S**; Gullick, WJ and Hynes, NE. (1996) Intracellular expression of a scFv directed to the EGFR leads to growth inhibition of tumour cells. Oncogene **13** 275-282.

Mason, S and Gullick, WJ. (1995) The Type 1 Growth Factor Receptors: an Overview of Recent Developments. The Breast **4**, 11-18.

Patents

Epitopes or mimotopes derived from the c-epsilon-2 domain of IgE, antagonists thereof, and their therapeutic uses (WO 00/50460)

Epitopes or mimotopes derived from the c-epsilon-3 or c-epsilon-4 domains of IgE, antagonists thereof, and their therapeutic uses (WO 00/50461)

Human monoclonal antibodies to heparanase. Filed Nov 2002 (Patent no. WO2004043989)

PERSONAL

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Nationality: British

EXHIBIT B

Immunohistochemical Analysis of CDCP1 expression in cancer tissue

A recombinant monoclonal antibody derived from a phage display library that is specific for the extracellular domain (ECD) of CDCP1, was utilised to stain ovarian cancer tissue sections from 11 donors. The samples represent the serous and clear cell sub-types of this disease. Both the CDCP1 specific antibody and the isotype control are comprised of human antibody variable regions fused to mouse antibody constant regions. Representative samples are shown in Figure 1 (samples 1, 2 & 3; normal ovarian tissue), and Figure 2 (ovarian tumour tissue; serous and clear cell type).

The method used in the IHC staining procedure was as follows. Frozen tissue sections were fixed in cold acetone for 10 mins before placing in PBS. Endogenous peroxidase activity was quenched by incubating in 3% hydrogen peroxide (H_2O_2) for 15 mins at room temperature (RT). After washing twice in PBS, the sections were incubated in blocking solution (PBS/3% BSA) for 30 mins and washed twice in PBS. A strepatvidin/biotin blocking kit (Vector Laboratories, Burlingame,CA, USA) was utilised according to the supplier's protocol to further reduce background signal at the development stage. The CDCP1 Ab was then added (10μg/ml in PBS/3% BSA) and incubated for 1 hour at 37°C. Following this, the sections were washed three times in PBS prior to addition of the secondary antibody reagent, biotinylated donkey anti-mouse IgG (Jackson ImmunoResearch Laboratories, Westgrove, PA, USA), diluted 1:500 in PBS/3% BSA. After 30 mins at 37°C, the sections were washed 3x in PBS before incubating with Streptavidin ABC complex (Dako UK Ltd, Ely, Cambridgeshire, UK) according to the supplier's protocol for 20 mins at 37°C. Following two washes in PBS, DAB reagent (Vector Laboratories) was added and coloured reagent product allowed to develop. Sections were then washed in water, counterstained with haematoxylin, washed, dehydrated and mounted for examination.

Figure 1.

Normal Ovary tissue

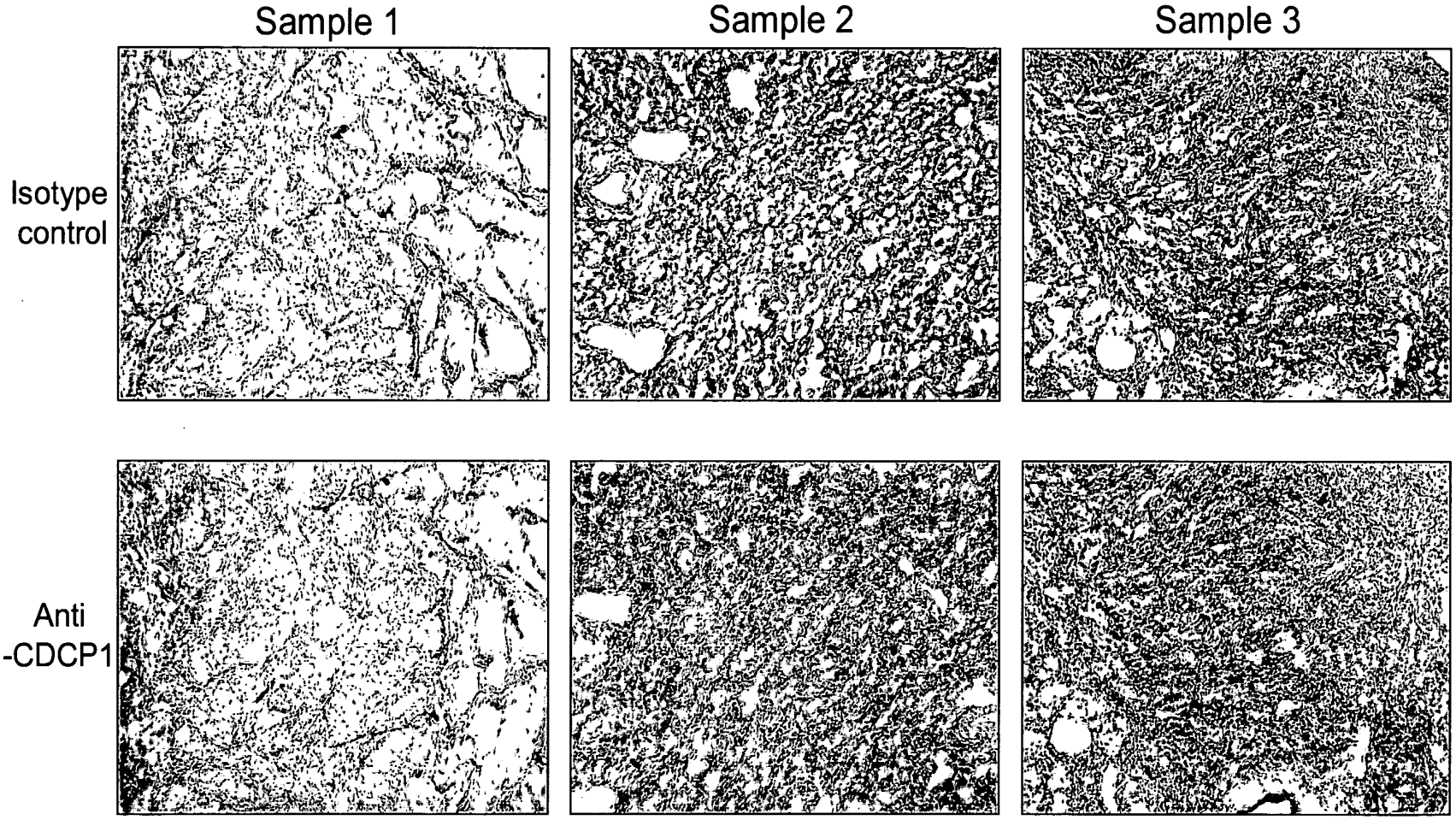

Figure 2.

Ovarian tumour tissue